THE LEATHER INDUSTRY: A STUDY OF THE IMPACT OF POLLUTION CONTROL COSTS

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VOLUME III

THE IMPACT OF POLLUTION CONTROL COSTS ON THE TANNING INDUSTRY

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VOLUME 3: THE IMPACT OF POLLUTION CONTROL COSTS ON THE TANNING INDUSTRY

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PREPARED FOR:

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December 1, 1971

Mr. Eric Zausner
Council on Environmental Quality
722 Jackson Place, N.W.
Washington, D.C. 20006

Dear Mr. Zausner:

Attached is Urban Systems' final report on our Study of the Impact of Pollution Control Costs on the Tanning Industry.

The report is divided into three volumes entitled: The Executive Summary, The Industry Description, and The Impact of Pollution Control Costs on the Tanning Industry.

We were very pleased to be able to undertake this study and hope that it will contribute to an understanding of the impact of waste control on the tanning industry and the implications of pollution control policies and regulations for the industry.

Best regards,

Richard Williams

Richard Williams

RW:jak

Of course a special thanks must go to Hoff Stauffer of the Environmental Protection Agency's staff for his guidance and encouragement. One sometimes gets the impression that government contract managers just spend their time waiting for reports to come in. Hoff Stauffer's long hours on the job made our long hours more bearable.

Richard Williams

Volume 3

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1.0 Introduction

This portion of the tanning industry study should be read after the Industry Description section, Volume 2. This volume attempts to bring the disparate segments of the Industry Description section together for an analysis of waste control costs on the industry as a whole and on individual firms.

The general conclusion to be drawn is that in the aggregate pollution control costs will have little or no effect on the industry. There is no reason to believe that production levels or employment will be affected sufficiently to distinguish the effects from the reduction resulting from reduced American shoe production.

The effects on individual firms will be a short term reduction in their profit margins and perhaps the earlier selection of those establishments that will be forced to shut down because of reductions in total demand for leather.

2.0 Disaggregation of the Tanning Industry

The leather tanning industry has over 500 member firms. This fact alone forces one to look for industry

groupings to simplify the analysis. The first division of firms was between those with more and less than 20 employees. As far as can be determined the former group of 199 is listed in the Industry Description section of this report. The study focuses on this group.

The next segmentation of the firms is according to the type of waste treatment facilities the firms are or will be utilizing. Essentially the division is between firms in municipal sewer systems, those with joint town-tannery treatment plants, and rural firms which must treat their own waste.

Grouping firms beyond these divisions are first of all very difficult to make and secondly not very interesting in terms of waste control costs. Technology differences between firms are very small. Product differences are reflected in waste load and the industry list classifies the firms in this way. But the essential point of the cost analysis is that the cost will be small for all firms except a few isolated plants which must put up their own treatment facilities. Even these plants can choose to subcontract their pretanning operations at little increased cost and substantially reduce their waste problem.

Any financial data for tanneries is hard to come by and certainly is not sufficient to establish a relation between financial condition and product or technology. The financial analysis has made the distinction between smaller firms ($250 thousand to $1 million in annual sales) and larger firms. The current assets to current liabilities ratio of small tanneries in the lower quartile of financial strength is 1.0 compared with 1.7 for the lower quartile of larger tanneries. The 1963 distribution of older technology was much higher in small tanneries than in larger tanneries. Thus while there is not enough data to generalize about the financial condition of tanneries subdivided by products or technology, it is clear that in a contracting industry small firms with old technology are the most vulnerable, waste control costs aside.

The net result of these considerations is that this evaluation of the impact of pollution control costs is not strictly concerned with industry groupings beyond the type of treatment facility which the firms can use. Where additional subdivisions are useful and the data is available the subdivisions are identified.

3.0 Aggregate Impact of Pollution Control Cost on the Tanning Industry

3.1 Prices

Two parameters are of importance when describing the impact of waste control costs. The first is the price elasticity of demand for leather, and the second is the distribution of effects among firms in the industry. The analytics of this analysis are very much simplified by the observation that there is a very low elasticity of demand; and, while there are differences in the cost effects, they are small.

As was discussed in more detail earlier, time series on hide and leather prices and leather production showed very clearly that leather production is apparently unaffected by large changes in leather prices resulting from changes of as much as 100 percent in hide prices. This is the fundamental pricing phenomena of the leather industry and leads one to believe that a one percent or two percent increase in costs due to pollution control will result in an equal increase in leather prices.

3.2 Production

After observing that there is a low price elasticity of demand for leather over a year or two, it is very

difficult to predict the long term effects on production levels of price changes. Following through the reasons for a low elasticity of demand, one sees first that the final demand for shoes (80 percent of the leather market) is price inelastic (as estimated by Houtthakkor and Taylor, "Consumer Demand in the U.S.A., 1929-1967." Harvard University Press, 1970), and the price advantage of imported shoes is so great that small changes in domestic prices probably have little effect on the share of imports. Secondly, the substitution of synthetics for leather is a function primarily of expectations about the acceptability of synthetics and again is relatively insensitive to marginal price changes. Substantial price incentives already exist for substituting synthetics for leather, but uncertainty as to consumer acceptability has so far held back significant substitution.

To restate the situation, one can extrapolate production trend lines and predict leather production for the next three or four years but these levels would be unrelated to pollution costs and almost completely are a function of American shoe production and substitution trends--both very volatile variables. In the

Industry Description volume there is discussion of a carefully prepared prediction of shoe production made for the Shoe Manufacturers Association two years ago. The prediction was intended to show the impact of imports and thus could be expected to be pessimistic, but the projections now turn out to be far too optimistic.

For these reasons we have not attempted to make any further production predictions than are reported in the Industry Description section since future total production is only slightly related to waste control costs and then only in a complex way. However, the costs will redistribute somewhat the production among tanneries.

3.3 Employment

Employment patterns in the tanning industry will closely follow production patterns. As total production declines so will total employment. Production of leather fell by 16.2 percent from 1967 to 1970, and employment fell by 8.8 percent to 28,000. There are two patterns which should be noted with respect to the redistribution of employment.

Firms which are most likely to actually close are those which are small with older equipment and which must raise significant capital to build their own treatment or perhaps pretreatment facilities. This would result in a reduction in the number of small rural tanneries tending to concentrate the industry more in larger firms in metropolitan areas.

The second employment pattern is that larger firms which are facing large control costs are shutting down their "beam houses," their preliminary cleaning and tanning operations and subcontracting the work. The result is that production is held constant and employment is reduced by 15 percent to 20 percent. All of the firms interviewed which had taken this option achieved most of the employment reductions through attrition since there is a high turn-over among employees in the beam house and some other parts of the plant.

There are a number of tanneries which would have significant impact on local unemployment rates if they closed, and they are identified in Volume 2. But there does not seem to be any particular geographical groupings of firms which might actually close. No large tanneries were identified which might close.

3.4 The Role of Present and Future Pollution Control Strategies

We have noted elsewhere that total public policy toward controlling industrial water pollution is not evenhanded in its impact on the tanning industry. The present cost of control for firms ranges from zero in cities with no sewer charges to three percent of annual sales for firms building and operating their own treatment plants. These disparities are a direct result of present federal, state, and local grant programs and user charge schemes.

Approximately 71 percent of the tanneries are now connected to municipal sewer systems. The municipal systems have two important cost advantages for the firms. The less important, in most cases, is that it can take advantage of the economies of scale in waste treatment by sharing facilities with the municipality and other industries in the area. More important is the availability of federal subsidies for the capital cost of construction of the treatment plant. The state and federal subsidy can amount to 80 percent to 85 percent of the capital cost, leaving the firm with the burden of paying only its share of 15 percent or 20 percent

of the capital cost and its share of the operating costs of the plant. Since capital costs bulk very large in the total, this subsidy is substantial. There are upper limits on the percent of industrial waste allowable in a federally subsidized treatment plant, but the limit has been high.

One should hasten to note again that most municipalities have not been charging industrial users at the marginal cost of treating their waste including the unsubsidized capital costs. Rather the sewer system costs have been covered by the property tax or a percentage of the water bill. Chicago is the only city with a large concentration of tanneries where some attempt is made to recover the actual cost of treatment. The Chicago tanneries are understandably upset because tanneries in Milwaukee have no sewer charges and do not expect to face any in the near future. Firms which cannot tie into subsidized systems can face as high as three percent additional costs. Thus the net result of present subsidy and charge schemes is a disparity between what costs individual tanneries face in order to meet pollution control regulations.

It is important to note that the capital subsidy to industry may well be terminated in the near future. The Federal Water Pollution Control Act Amendments of 1971 recently passed by the Senate contain a provision which would end the subsidy and force municipalities to charge the full incremental cost of treatment, including the incremental capital cost, to industrial users.

3.5 Timing of Pollution Control Cost Impact

The leather tanning industry is not now experiencing a period of adjustment to a uniform set of regulations. As noted above charge schemes will be different for different firms in the short run. Before concluding the discussion of aggregate impact it is well to consider the likely timing of pollution control cost impact on the industry.

In the short run, probably the next two or three years, there will be the maximum dispersion of cost increases as the remaining firms in the industry are forced to provide some kind of treatment with some bearing noticeable, though not excessive, incremental costs. Then with the spread of surcharges by municipalities

and the end of the capital subsidy to industry, the costs should become more uniform though the final equilibrium may not be reached for quite some time.

The expectation of reaching an equilibrium assumes that the final goal does not change. There is a high level of uncertainty in the industry as to what future regulations the firms might face. Up to this point we have been assuming that firms are moving towards secondary treatment as their goal. Yet the 1971 Amendments to the Water Pollution Control Act specify a zero discharge goal. In addition, as pollution regulations become more sophisticated, they are likely to become more specific regarding the effluents of particular industries. Much of the expense which Chicago tanneries have faced resulted from regulations requiring them to build pretreatment facilities to stop their dumping of particular wastes into the sewer system.

Thus there are likely to be several rounds of new regulations affecting the tanning industry and new expenditures by the firms to meet the regulations. For this particular industry the important element is whether the costs are approximately equally distributed among the firms.

4.0 Impact of Pollution Control Costs on Individual Firms

4.1 Differential Impact

When the tanning industry as a whole is considered, the effects of pollution control costs seem small. Among individual tanneries there are cost differences which can be significant since leather tanneries are very price competitive with one another.

Tanneries fall into three categories differentiated by their ability to tie into a municipal sewer system. Presently about 71 percent of the plants are tied into such systems. Among these systems there are several levels of charge schemes. These range from no charges to yearly charges and surcharges equal to about one percent of yearly sales for Chicago firms. A large number of firms are paying relatively small charges as part of their real estate tax or water bill. The Chicago charges are particularly interesting because the control program has just been instituted in the last year. In addition to the yearly charges, the plants must pretreat and hence eliminate certain wastes from their flow. Most Chicago tanneries have undertaken these expenditures

and are now having to live with the one percent cost increase. However, a few firms have taken the option of closing their beam house which produces most of their pollution. This was the option described earlier for rural tanneries which might have to put up their own treatment plants.

Closing the beam house does not add to the cost of producing the finished leather. The companies which are contracting to perform the preliminary tanning and cleaning operations are making their margin from operating at a larger and more efficient scale and from reduced freight costs. The blue tanning operation, as it is called, is being marketed at the average cost for a tannery to do the same work in-house. Tanneries would rather not subcontract this part of the process because they want to maintain control over the whole tanning process. But a number of firms are exercising this option.

Beside the tanneries which are connected to municipal systems the remaining two groups of firms are those in small towns which are putting up joint town-tannery treatment plants and those in rural areas which must treat thier own waste.

The actual costs of several joint projects are reported in the Industry Description Volume. These costs are substantially higher than predicted in the "Cost of Clean Water" data. Yet in all cases after state and federal capital subsidies are considered, the yearly cost to the tanneries average around one percent of sales.

Rural tanneries present a different picture. While they cannot get capital subsidies, they have been able to build much less expensive treatment facilities. In particular they are using settling and aeration lagoons requiring large amounts of land area which firms in urban areas do not have available. Cost estimates supplied by consultants to the tanneries suggest that yearly treatment costs for rural tanneries will be around one percent of sales. But the cost of achieving higher levels of treatment such as zero discharge could be substantially higher. The rural firms which were interviewed reported substantially less cost than the one percent principally because the total capital cost of their facilities was much less. The firms for which this pattern does not seem to hold are sole leather tanneries which have the most difficult

waste to treat. In one such case the costs were above two per cent.

In summary, it seems accurate to say that rural firms can generally treat their waste to the level of secondary treatment and stay within the one percent cost figure. If the treatment requirements are raised the sole leather producers will be most affected and their costs could be substantially higher.

4.2 Pollution Control Costs on Tannery Financial Statements

The Industry Description discusses the peculiarities of tannery financial statements in some detail. For the purposes of this discussion, the financial statement developed by Robert Morris Ass. will be used.

There are two considerations when discussing the impact of pollution control costs on the financial strength of a company. These are the effect on the company's profit margin, and the company's ability to raise capital for non-productive equipment.

The Robert Morris report analyzed 15 financial statements of tanneries with sales of between $.25 and 1.0 million and 16 firms with sales between one and

ten million dollars. The before tax profits were 4 percent and 6.6 percent of sales for the smaller and larger firms respectively.

The data which was collected on pollution control costs was inconclusive in terms of identifying the economies of scale for waste treatment. The "Cost of Clean Water" estimate for yearly costs is 1 percent for larger firms and 2 percent for small firms, but there are large percentage uncertainties with the numbers.

The essential argument which has been made is that tanneries will be able to pass on small price increases resulting from pollution control costs. The firms interviewed expressed confidence in their ability to live with these costs and the financial statements confirm this view. One would expect a firm to be able to pass on the cost within a six month period and live with the reduced margin until then.

Actually the firms interviewed thought their costs would be 2 to 3 percent rather than 1 percent and felt they could carry the higher costs.

The question of whether tanneries can raise capital for pollution control equipment is more complex. There is very little convertability to tannery equipment or pollution control equipment for collateral purposes. Essentially capital financing would have to be covered by current assets. The Morris analysis listed current ratios for tanneries of about two which indicates that they should be able to either raise the capital or self finance abatement equipment. Again this observation is in concert with what the tanners themselves are saying.

It is interesting to note that the current ratio for smaller firms in the lower quartile of financial strength is 1.0 as compared with 1.7 for larger firms in their lower quartile. These smaller firms which also tend to have old technology would probably not be able to raise much money to purchase waste control equipment. And these firms would seem to be the most likely to be closed first in a contracting industry like the leather industry. This conclusion based on financial data coincides with observations of tanners themselves as to which are the most likely firms to close.

It should be noted finally that the industry has already made substantial capital investment in abatement equipment--a minimum to date of $30 million. The preliminary 1972 "Cost of Clean Water" estimates give a 1972 value for abatement equipment of $65 million, but this is not an estimate of how much the industry has paid out. Rather it is an estimate of the total cost of existing facilities treating tanning waste, including the share of municipal plants involved. The estimates indicate that, by 1972, 57 percent, by cost, of the necessary treatment equipment will be installed, but what percentage of the remainder will have to be directly financed by the tanneries is not specified. The replacement value of tannery plant and equipment is only $200 million, so that the raising of capital to cover the abatement expenditures to date has represented a major effort by the industry at least in terms of new capital relative to existing capital. Apparently most of the new capital has been self financed.

4.3 Comments on Interviews with Tanners

During the course of this study the owners, presidents, or managers of 18 tanneries were interviewed in detail

for their assessment of the impact of pollution control costs on their firms. The specific results of these interviews are reported elsewhere. But some general observations are appropriate here.

Generally there is a strong awareness in the industry that pollution is a serious problem for the industry. Many, probably a majority of those interviewed, expressed strong feelings that the industry was threatened by unreasonably rigorous enforcement of pollution controls. It would be accurate to say that the Chicago companies felt harassed. Yet almost all of those interviewed were confident that their particular plant would be able to finance the necessary expenditures, even though some of them expected to have to absorb the costs. This is particularly interesting because they thought the per unit costs of pollution control would be two to three percent rather than one percent as actually calculated from the capital and operational cost figures they supplied.

The confidence in being able to raise capital for control equipment is also noteworthy because tanners do not have extensive bank financing of equipment.

They do bank finance inventories. On several occasions when tanners were asked what they would do if they could not get bank financing for control equipment, they said they or the owners would put up the money. This reflects the view that many privately held firms have assets related to the tannery or derived from the tannery which they can use if necessary to support the company. The owners of these firms are not strictly profit maximizers. They take the view that what ever is necessary to keep the business open which is at least paying them a good salary will be done.